FOR OFFICIAL USE ONLY
NOT FOR PUBLIC DISTRIBUTION

Governor's Office of Homeland Security & Emergency Preparedness

INCIDENT ACTION PLAN - 02

Incident Name: Tulane National Primate Research Center 15-005

Unified Command:

CDC - RADM Scott Deitchman

GOHSEP - Dir. Kevin Davis

LA DHH - Dr. Jimmy Guidry

St. Tammany - Dir. Dexter Accardo

Approved:

Operational Period:

Date: February 10, 2015

Time: 2/10/2015 - 0900hrs to 2/11/2015 - 0900hrs

St. Tammany Parish EOC
510 E. Boston Street
Covington, La. 70433
Office: 985-898-2359

St. Tammany Parish EOC - GPS Coordinates
30.476016, -90.095449

Prepared By	C.R.Simoneaux	Signature		Date	2/10/15	Time	1000hrs

90040922

Governor's Office of Homeland Security & Emergency Preparedness

INCIDENT OBJECTIVES		Incident Number	15-005	ICS 202
Incident Name	Tulane National Primate Research Center	Operational Period	2/10/2015 0900hrs to 2/11/2015 0900hrs	

	Objectives
1	**Investigation process - On Campus: To identify, isolate, remediate and prevent further tranmission of BP on campus grounds.**
	Sampling Objectives:
1.1	To conduct serological sampling to determine potential parameters of transmission exposure.
1.2	To conduct air sampling to determine potential of aerosolized transmission.
1.3	To conduct soil sampling within the cages to validate spread of BP in cage-soil.
1.4	To conduct soil sampling outside the cages to determine if BP has spread beyond enclosures
1.5	To conduct water sampling around the compound and at discharge points to determine if BP is growing in water discharges.
	Remediation Objectives:
1.6	To conduct remediation of enclosures where infected animals were - or are - located.
1.7	To conduct remediation outside the cages based on soil sampling results.
1.8	To identify potential mitigation activities should air and/or water samples come back positive.
2	**Surrounding Area - Off Campus: To conduct risk assessment(s) within a meaningful vicinity outside the compound to ascertain need for further sampling wildlife, livestock, and other potential at-risk animals.**
2.1	To conduct risk survey of animals in the area and determine whether these animals require further testing.
2.2	To utilize findings from the investigative process to determine need for further mitigation activities outside the compound.

Prepared by	C.R.Simoneaux	Signature		Date		Time	
Approved by		Signature		Date		Time	

Governor's Office of Homeland Security & Emergency Preparedness

INCIDENT OBJECTIVES		Incident Number	15-005	ICS 202 (page 2)
Incident Name	Tulane National Primate Research Center	Operational Period	2/10/2015 0900hrs to 2/11/2015 0900hrs	

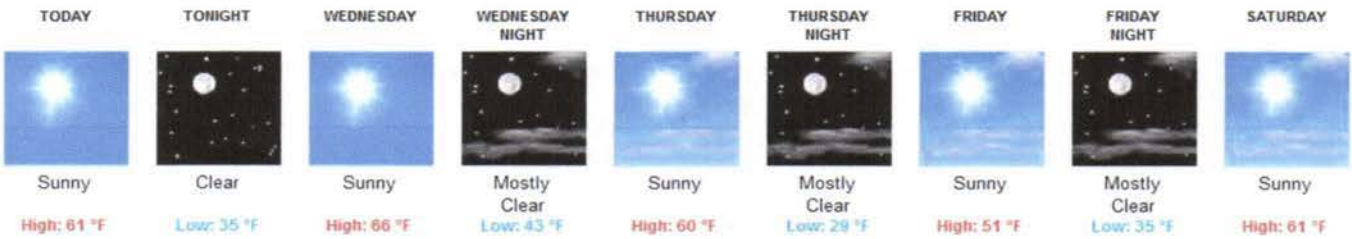
Objectives (continued)

3	**Public Communications**
3.1	To formalize JIC members under CDC lead.
3.2	To develop Frequently Asked Questions document in readiness for public dissemination.

Operational Period Command Emphasis
(Priorities, Key Decisions/Directions)

Expedient development and implementation of testing and response plans is the Unified Command emphasis, while at all times making decisions which are in the best interest of worker and public safety. Any issues which arise to impede this effort will be immediately communicated to the Unified Command for assistance and resolution. Full compliance with animal health and welfare regulations will be observed, and efforts will be made to minimze impacts to animal welfare.

NWS Weather Forecast for Covington, La. as of 2/10/2015 at 0600hrs CST



National Weather Service Office Slidell, La. 985-649-0429 http://www.srh.noaa.gov/lix/

Safety Message / Site Safety Plan

Safety of response personnel and the general public is paramount. Primary focus will be on strict adherence to safety rules and regulations and proper use of PPE. Any safety concerns, incidents or injuries must be immediately reported to a supervisor and the incident Safety Officer.

Is a Site Safety Plan Required?	Yes	No	Location of Site Safety Plan:

Incident Action Plan Components (check if attached)

x	Incident Action Plan Cover (ICS-200)		Medical Plan (ICS-206)
x	Incident Objectives (ICS-202)		Site Safety Plan (ICS-208)
x	Organization Assigment List (ICS-203)	x	Incident Map(s)
	Assignment List (ICS-204)	x	Joint Press Release 2-9-2015
x	Communications Plan (ICS-205T)	x	Melioidosis Fact Sheet

Prepared by	C.R.Simoneaux	**Signature**		**Date**		**Time**	
Approved by		**Signature**		**Date**		**Time**	

Governor's Office Of Homeland Security & Emergency Preparedness

ORGANIZATION ASSIGNMENT LIST				Incident Number	15-005			ICS 203
Incident Name	Tulane National Primate Research Center			Operational Period	2/10/2015 0900hrs to 2/11/2015 0900hrs			
Unified Command				**Operations Section**				
UC/IC	RADM Scott Deitchman, MD (CDC)			Operations Chief	Miguel Cruz, PhD (CDC)			
UC/IC	Dir. Kevin Davis (GOHSEP)			Dep. Ops Chief	Collins Simoneaux (GOHSEP)			
UC/IC	Jimmy Guidry, MD (LA DHH)			**Branch 1 - Investigation Branch**				
UC/IC	Dir. Dexter Accardo (St Tammany OHSEP)			Branch Director	Robbin Weyant, PhD (CDC)			
Command Staff								
Safety Officer	Robbin Weyant, PhD (CDC)							
PIO (JIC Primary Contacts)	* See PIO - JIC Information Below *							
Liaison Officer	Darryl Delatte (GOHSEP)							
Agency Representative								
Tulane Primate Center	Dir. Mark Lackner, DVM			**Branch 2 - Remediation/Response Branch**				
Tulane Primate Center	Mark Alise, PhD			Branch Director	Bill Rhotenberry (EPA)			
USDA/APHIS	Kenneth Angel, DVM			Dep. Branch Dir.	Mike McAteer (EPA)			
USDA/APHIS	Katie Portacci, DVM			Tech Specialist - SSC	Mike Nalipinski (EPA)			
USDA/APHIS	Lily Rai, DVM							
USDA/APHIS	Vicki Guilfor, DVM							
US EPA	John Martin							
CDC/NIOSH	Joshua Harney							
LDAF	Brent Robbins, DVM			**Joint Information Center**				
LA DHH	Gary Balsamo, DVM			Tulane PIO	Mike Strecker			
LA DHH	Dr. Roseanne Pratts			Tulane PIO	Debbie Grant			
LDEQ	Mike Algero			CDC PIO (Lead)	Barbara Reynolds			
LDEQ	Jeff Dauzat			CDC PIO	Jason McDonald			
				CDC PIO	Christian Scheel			
Planning Section				CDC PIO	Bernadette Burdin			
Planning Chief	Melton Gaspard (GOHSEP)			US EPA PIO	Joseph Hubbard			
Dep. Planning Chief	Paul Reeb (St. Tammany Parish)			US EPA PIO	David Gray			
Situation Unit				GOHSEP	Mike Steele			
Resource Unit				LA DHH	Olivia Watkins			
Documentation Unit	Vanessa Wall (St. Tammany Parish)			LDAF	Veronica Mosgrove			
Demobilization Unit				St. Tammany Parish	Ronnie Simpson			
Technical Specialists (Specialty and Name)				**Air Operations**				
GIS				Air Ops Chief				
Logistics Section				**ESF Coordination**				
Logistics Chief	Clarence Powe (St. Tammany Parish)			ESF 1 - Transportation				
Dep. Logistics Chief				ESF 2 - Communications				
Service Branch				ESF 3 - Public Works				
Service Branch Dir.				ESF 4 - Fire Fighting				
Communications Unit				ESF 5 - Emergency Mgt.				
IT Unit				ESF 6 - Mass Care & Assistance				
Medical Unit				ESF 7 - Resources				
Food Unit				ESF 8 - Public Health & Medical				
Support Branch				ESF 9 - Search and Rescue				
Support Branch Dir.				ESF 10 - Oil, HazMat				
Supply Unit				ESF 11 - Agriculture & Nat. Res.				
Facilities Unit				ESF 12 - Energy				
Ground Support Unit				ESF 13 - Public Safety & Security				
Finance Section				ESF 14 - Recovery & Mitigation				
Finance Chief				ESF 15 - External Affairs				
Dep. Finance Chief				ESF 16 - Military Affairs				
Prepared by	C.R.Simoneaux	**Signature**			**Date**		**Time**	
Approved by		**Signature**			**Date**		**Time**	

FOR OFFICIAL USE ONLY
NOT FOR PUBLIC DISTRIBUTION

INCIDENT TELEPHONE/E-MAIL CONTACT LIST		Incident Number	15-005	ICS 205T
Incident Name	Tulane National Primate Research Center	Operational Period	2/10/2015 0900hrs to 2/11/2015 0900hrs	

Telephone/Email List			
Agency/Position	**Name**	**Cell Phone**	**Email**
** Note - See Last Page for PIO/JIC and Public Inquiry Phone Numbers **			
Tulane National Primate Research Center			
Tulane - Director	Andrew Lackner, DVM	985-966-6402	alackner@tulane.edu
Tulane - COO	Mark Alise, PhD	985-871-6200	malise@tulane.edu
Tulane - PIO	Mike Strecker	504-512-1347	mstreck@tulane.edu
Tulane - PIO	Debbie Grant	504-578-4071	dgrant@tulane.edu
St. Tammany Parish Contacts			
St Tammany Parish - President	Patricia Brister	985-898-2362	pbrister@stpgov.org
St Tammany Parish - OHSEP Dir.	Dexter Accardo	985-264-1087	daccardo@stpgov.org
St Tammany Parish - OHSEP	Clarence Powe	985-290-7654	cpowe@stpgov.org
St Tammany Parish - OSHEP	Paul Reeb	985-774-9710	pjreeb@stpgov.org
St Tammany Parish - PIO	Ronnie Simpson	504-905-7841	rsimpson@stpgov.org
Louisiana State Agency Contacts			
Governor's Office	Sarah Turner		sarah.turner@la.gov
GOHSEP - Director	Kevin Davis	225-925-7345	kevin.davis@la.gov
GOHSEP - Chief of Staff	Christina Dayries	225-247-0797	christina.dayries@la.gov
GOHSEP - Deputy Director	Chris Guilbeaux	225-715-3191	christopher.guilbeaux@la.gov
GOHSEP - Asst. Deputy Dir.	Kevin Breaux	225-573-9345	kevin.breaux@la.gov
GOHSEP - Administrative Officer	James Smith	225-925-7500	james.b.simth@la.gov
GOHSEP - Executive Assistant	Laverna McNamee	225-925-7500	vernie.mcnamee@la.gov
GOHSEP - Operations Sect. Chief	Sean Wyatt	225-754-2225	sean.wyatt@la.gov
GOHSEP - Dep. Operations Chief	Jason Lachney	225-933-0173	jason.lachney@la.gov
GOHSEP - Operatons Officer	Emily Granier	225-925-7500	emily.granier@la.gov
GOHSEP - OpsO/WebEOC Admin	Melton Gaspard	985-634-2520	melton.gaspard@la.gov
GOHSEP - Planning Sect. Chief	David Schultz	225-252-2005	david.schultz@la.gov
GOHSEP - Logistics Chief	Michael Hamilton	225-335-1226	michael.hamilton@la.gov
GOHSEP - Region 1 Coordinator	Darry Delatte	225-485-7452	darryl.delatte@la.gov
GOHSEP - Region 9 Coordinator	Collins Simoneaux	225-329-4261	collins.simoneaux@la.gov
GOHSEP - PIO	Mike Steele	225-788-0095	mike.steele@la.gov
LA DHH - Secretary	Kathy Kliebert		kathy.kleibert@la.gov
LA DHH - Health Officer	Jimmy Guidry, MD	225-342-3417	jguidry@la.gov
LA DHH - Exec. Dir. Emerg. Prep.	Rosanne Prats, PhD	225-938-8059	rosanne.prats@la.gov
LA DHH - R9 Hosp. DRC	Keith Peek	985-290-2642	keith.peek@la.gov
LA DHH - Program Manager	Theresa Sokol	504-250-8672	theresa.sokol@la.gov
LA DHH - State PH Veterinarian	Gary Balsamo, DVM	504-568-8315	gary.balsamo@la.gov
LA DHH - PIO	Olivia Watkins	225-610-6660	olivia.watkins@la.gov

LDAF - Commissioner	Mike Strain, DVM	225-922-1233	mike.strain@ldaf.state.la.us
LDAF - State Veterinarian	Brent Robbins, DVM	985-264-4142	brobbins@la.gov
LDAF - Asst. State Veterinarian	Diane Stacy, DVM	225-935-2173	dstacy@ldaf.la.gov
LDAF - Asst. Commissioner	John Walther	985-438-6111	john_walther@ldaf.state.la.us
LDAF - PIO	Veronica Mosgrove	225-229-7147	vmosgrove@ldaf.la.gov
LDEQ - Secretary	Peggy Hatch		peggy.hatch@la.gov
LDEQ - Emergency Response Mgr	Bryan Riche	504-214-4138	bryan.riche@la.gov
LDEQ - ESS	Jeff Dauzat	504-736-7714	jeff.dauzat@la.gov
LDEQ - ES Manager	Mike Algero	225-329-9745	mike.algero@la.gov
LDEQ - ES2	Joshua Fowler	504-736-7737	joshua.fowler@la.gov
Federal Agency Contacts			
US CDC - Associate Director	RADM Scott Deitchman, MD	770-488-7145	sed2@cdc.gov
US CDC - Select Agent Prog. Dir.	Robbin Weyant, PhD	678-614-7284	rweyant@cdc.gov
US CDC - Emergency Ops Officer	Miguel Cruz, PhD	678-763-4703	mgc8@cdc.gov
US CDC - PIO (Lead)	Barbara Reynolds, PhD	404-918-1586	bsr0@cdc.gov
US CDC - PIO	Christian Scheel	404-488-0583	bjn2@cdc.gov
US CDC - PIO	Jason McDonald	404-387-3660	gnf0@cdc.gov
US CDC - PIO	Bernadette Burden	404-213-6874	btb8@cdc.gov
US CDC/NIOSH	Joshua Harney		vzh@cdc.gov
US EPA	Bill Rhotenberry	214-437-9804	rhotenberry.william@epa.gov
US EPA	Mike McAteer	214-354-9371	mcateer.mike@epa.gov
US EPA - OSC	John Martin	214-789-1994	martin.john@epa.gov
US EPA - Director, CMAD	Erica Canzler	202-564-2359	canzler.erica@epa.gov
US EPA - START	Samuel Check	972-977-1579	sam.check@westonsolutions.com
US EPA - START	José Ojeda	619-417-3298	jose.ojeda@westonsolutions.com
US EPA - START	Robert Sherman	225-573-9785	robert.sherman@westonsolutions.com
US EPA - PIO	Joseph Hubbard		hubbard.joseph@epa.gov
US EPA - PIO	David Gray	214-789-2619	gray.david@epa.gov
USDA - Asst Dist Director, Dist 4	Kenneth Angel, DVM	601-214-0722	kenneth.l.angel@aphis.usda.gov
USDA - Risk Analysis Proj. Mgr.	Katie Portacci, DVM	970-494-1741	katie.portacci@aphis.usda.gov
USDA -	Victoria Guilfoil, DVM	405-623-6505	victoria.y.guilfoil@aphis.usda.gov
USDA - PIO	Joelle Hayden	301-851-4040	joelle.r.hayden@aphis.usda.gov

FOR OFFICIAL USE ONLY
NOT FOR PUBLIC DISTRIBUTION

INCIDENT PIOs - JIC Contacts			
Tulane - PIO (Public Inquiries)	Mike Strecker	504-512-1347	mstreck@tulane.edu
Tulane - PIO	Debbie Grant	504-578-4071	dgrant@tulane.edu
US CDC - PIO (CDC Lead)	Barbara Reynolds, PhD	404-918-1586	bsr0@cdc.gov
US CDC - PIO	Christian Scheel	404-488-0583	bjn2@cdc.gov
US CDC - PIO (Public Inquiries)	Jason McDonald	404-387-3660	gnf0@cdc.gov
US CDC - PIO	Bernadette Burden	404-213-6874	btb8@cdc.gov
US EPA - PIO	Joseph Hubbard		hubbard.joseph@epa.gov
US EPA - PIO	David Gray	214-789-2619	gray.david@epa.gov
USDA - PIO	Joelle Hayden	301-851-4040	joelle.r.hayden@aphis.usda.gov
GOHSEP - PIO	Mike Steele	225-788-0095	mike.steele@la.gov
LA DHH - PIO	Olivia Watkins	225-610-6660	olivia.watkins@la.gov
LDAF - PIO	Veronica Mosgrove	225-229-7147	vmosgrove@ldaf.la.gov
St Tammany Parish - PIO	Ronnie Simpson	504-905-7841	rsimpson@stpgov.org
**** Public Information Numbers - Only the Below Information is Releasable to the Public ****			
Questions regarding the investigation or remediation activities are directed to CDC (Jason McDonald) at 404-387-3660			
Questions regarding the TNPRC facility are directed to Tulane (Mike Strecker) at 504-512-1347			
All other questions are directed to GOHSEP (Mike Steele) at Mike.Steele@La.gov			

Prepared by	C. R. Simoneaux	**Signature**		**Date/Time**		

Tulane National Primate Research Center
18703 3 Rivers Road, Covington, LA 70433

Update: Ongoing Inquiry into Melioidosis Illness at Tulane National Research Center

Late November 2014, two non-human primates in the breeding colony at the Tulane National Primate Research Center (TNPRC), a private research facility, became ill and one was euthanized. In mid-December 2014, samples submitted to the CDC identified Burkholderia Pseudomallei as the causative agent. This strain of bacteria is not endemic in the US but was the subject of research at TNPRC. Because Burkholderia Pseudomallei is a tier 1 agent and the material was considered not in containment, the CDC and USDA initiated a joint investigation of TNPRC in January 2015. As part of the investigation conducted January 20-24, federal and state scientists visited the TNPRC site to conduct epidemiological study and to review lab practices to determine possible route of transmission.

A recent event is that one of the investigators fell ill with unspecific symptoms. A blood test was conducted and Friday test results indicated a presence of antibodies in the blood indicating some exposure to BURKHOLDERIA PSEUDOMALLEI. It is too early to determine whether exposure was related to this recent visit to the center or whether the sick individual's travel history may have provided an opportunity for exposure.

The other members of the investigative team will be tested for possible exposure to the bacteria for baseline comparison and possible future diagnosis. This testing will provide some indication regarding route of transmission.

The Department of Health and Human Services' Centers for Disease Control and Prevention, along with the U. S. Department of Agriculture (USDA) and the Environmental Protection Agency (EPA), continues to work with Tulane University and state and local officials to identify, isolate, mitigate and prevent further transmission of BURKHOLDERIA PSEUDOMALLEI within the compound. Environmental testing – including Air, water, soil sampling - will guide remediation activities. Once samples are collected, it will take 1-2 weeks to obtain results.

Situational Update: Monday, February 9, 2015, as of 4pm CST

EPA:

-Deployed 3 air monitors at the facility in strategic locations.

-Water samples were collected by Tulane at 13 different locations on the grounds (Waste water treatment system locations)

-Work to collect soil samples begins later this week.

-All samples are being sent to CDC Atlanta for examination.

-Results are typically available 5-7 days after being collected.

CDC:

-Help provide guidance for Personal Protective Equipment and safety standards.

-Continuing the on-site investigative work with USDA.

-Asked to examine how materials are being moved throughout the facility, additional safety precautions.

LA Office of Public Health:

-Coordinate the effort to catalog personnel for baseline blood sampling

-OPH has organized the staff, equipment and process to obtain the blood samples in accordance with CDC protocols.

Melioidosis, also called Whitmore's disease, is an infectious disease that can infect humans or animals and is treatable with antibiotics. The disease is caused by the bacterium *Burkholderia pseudomallei.*
It is predominately a disease of tropical climates, especially in Southeast Asia and northern Australia where it is widespread. The bacteria causing melioidosis are found in contaminated water and soil. It is spread to humans and animals through direct contact with the contaminated source.

CDC's role is to protect the health and safety of researchers and the public. For more information about melioidosis, visit http://www.cdc.gov/melioidosis/index.html. Questions regarding the investigation and remediation activities should be directed to CDC (Jason McDonald) at 404-387-3660. Questions regarding the TPNRC facility should be directed to Tulane (Mike Strecker) at 504-512-1347. All other questions or concerns should be directed to Mike Steele at Mike.Steele@La.gov .

###

Ronnie Simpson
Director of Public Information &
Intergovernmental Relations

St. Tammany Parish Government
Department of Public Information
985-898-5243
rsimpson@stpgov.org
www.stpgov.org

What is melioidosis?
Melioidosis is a disease that affects humans and animals and is caused by the gram-negative bacterium *Burkholderia pseudomallei.* These bacteria are normally found in water and soil in certain parts of the world, including Southeast Asia and Northern Australia. Melioidosis can be severe and, in some cases, even fatal. Melioidosis has been found in a variety of animals, including mammals, reptiles, fish, and birds in or from areas where the disease is endemic.

How do people get melioidosis?
People can get melioidosis in several ways:

- When contaminated soil or water gets into their open wounds, abrasions, or their eyes, nose or mouth (mucous membranes).
- When they swallow food or water contaminated with the bacteria.
- When they improperly handle laboratory specimens contaminated with the bacteria.
- When they breathe in contaminated dust or water droplets.

In addition, it's theoretically possible that people might become infected when they have contact with body fluids from an infected animal.

What are the signs and symptoms of melioidosis?
Signs and symptoms of melioidosis vary depending on the type of infection and can easily be mistaken for other diseases such as pneumonia or tuberculosis. The incubation period ranges from one day to many years.

- For wound infections, signs and symptoms include localized pain or swelling.
- For pulmonary infections, signs and symptoms include cough, headache, fever, chest pain, anorexia (lack of appetite), and general muscle soreness.
- For bloodstream infections, signs and symptoms include high fever, headache, respiratory distress, disorientation, abdominal discomfort, and muscle tenderness.
- For infections that have spread throughout the body, signs and symptoms include fever, weight loss, stomach or chest pain, muscle or joint pain, headache, and encephalitis or seizures.

How is melioidosis diagnosed?
Melioidosis is diagnosed by isolating *Burkholderia pseudomallei* from the blood, urine, sputum, or skin lesions or from organ abscesses or by testing blood serum.

How is melioidosis treated?
Antibiotic treatment for melioidosis should start as soon as the disease is confirmed. Delaying treatment can result in poor outcomes. A physician will determine the most appropriate antibiotic treatment for a patient with a confirmed case of melioidosis.
Suggested reference: Wiersinga WJ, Currie BJ, Peacock SJ. Melioidosis. *N Engl J Med.* 2012;367(11):1035-44

Am I at risk?
You are at risk for exposure to melioidosis if:

- You have had contact with soil or water in countries where the disease is endemic.
- You work with laboratory specimens contaminated with the bacteria.

There are only a few documented cases in which melioidosis has been spread from person to person in a healthcare facility (known as nosocomial transmissions). Transmission from an infected animal to a human has not been confirmed, but theoretically, it is possible.

The following conditions may increase your risk for getting melioidosis if you are exposed: **diabetes, chronic liver or kidney disease, alcohol abuse, blood cancers** such as leukemia (hematologic malignancy), **low white blood cell count** (neutropenia or neutrophil dysfunction), **chronic lung disease** (asthma, bronchitis, emphysema, or cystic fibrosis), **thalassemia** (a blood disorder), **long-term steroid use**, or other **conditions that suppress the body's ability to fight infections** (immunosuppression).

How can melioidosis be prevented?
Currently, there is no vaccine to prevent melioidosis infection, but there are steps you can take to protect yourself from exposure:

- People working in agricultural settings in endemic areas should wear boots to prevent infection through the feet and lower legs.
- People traveling to endemic countries should take precautions to avoid contact with contaminated soil, especially if they have any open wounds, cuts, or scrapes.
- Healthcare workers should use standard contact precautions (mask, gloves, and gown). Additionally, testing on *B. pseudomallei* organisms should be performed inside a biosafety cabinet. Safe laboratory practices/procedures should be followed when working with the organism.
- All laboratory exposures (high and low risk) should be reported to the CDC Division of Select Agents and Toxins (DSAT). The guidelines to assess laboratory exposure, including classification of low versus high risk, can be found at http://wwwnc.cdc.gov/eid/article/14/7/07-1501_article

How long does *Burkholderia pseudomallei* live on a surface?
3-7 days. In tests, the bacteria was applied at room temperature to surfaces such as paper, stainless steel, glass, and polyethylene. It was still there after 3 days but not after 7 days.

How do you kill *Burkholderia pseudomallei*?
Burkholderia pseudomallei can be killed by using any EPA-registered hospital disinfectant such as 1:10 bleach and quaternary ammonium compounds. In chlorinated water, the bacteria would not survive because they are susceptible to standard residual levels of chlorine. The bacteria are also susceptible to low levels of ultraviolet light.